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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,424	03/08/2004	Eric A. Nyberg	14185-B	1883
29171	7590	04/05/2006	EXAMINER	
BATTELLE MEMORIAL INSTITUTE ATTN: IP SERVICES, K1-53 P. O. BOX 999 RICHLAND, WA 99352			MAI, NGOCLAN THI	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/796,424	Applicant(s) NYBERG ET AL.	
	Examiner Ngoclan T. Mai	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,8-39,41-137,148 and 149 is/are pending in the application.
- 4a) Of the above claim(s) 11-21,23 and 54-137 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2, 4-6, 8-10,22,24-39, 41-51, 53, 148-149 is/are rejected.
- 7) ☒ Claim(s) 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/9/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. Claims 1-5, 22 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP04116104.

The reference discloses a composition consisting of a metal powder, a binder and a sublimable substance such as naphthalene and dichlorobenzene, see abstract. The binder and the sublimable substance reads on the limitation "an aromatic binder system" where the sublimable substance is the aromatic species. The sublimable substance or aromatic species disclosed is present in an amount of from 3-15 wt%. Note that this amount encompasses the limitation less than 40 vol% of said aromatic species or less than 14 wt.% as calculated by the applicant per page 3 of the remark section. The amount of metal powder in the composition disclosed by the reference would encompass the amount metal powder recited in claims 24-26.

3. Claims 148-149 are rejected under 35 U.S.C. 102(b) as being anticipated by JP06-002011.

The reference discloses the a powder mixture comprising one or more than 2 kinds of powders selected from the group consisting of metal alloy, intermetallic compound and ceramic and one or more than 2 kinds of powders of sublimable materials. On page 4 of the translation, the reference discloses the sublimable materials are chlorobenzene and naphthalene powder, para [0020].

Claim Rejections - 35 USC § 103

4. Claim 6, are rejected under 35 U.S.C. 103(a) as being unpatentable over JP04116104.

The differences between the claim and the reference is that the reference does not specifically teach the aromatic binder system comprise benzene and naphthalene. However, since individually benzene and naphthalene is taught to be used as the sublimable substance, it would have been obvious

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to one of ordinary skill in the art to combine two or more materials when each is taught by the prior art to be useful for the same purpose. In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

5. Claims 8-9, 50-51 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP04116104 in view of JP06-002011.

The difference between the claims and JP04116104 is that JP04116104 does not teach the type of metal powder.

JP06-002011 teaches one or more than 2 kinds of powders selected from a group consisting of metal, alloy, intermetallic compound can be used to produce powder compact, see abstract. The metal powder can be refractory metal powder such as Ti powder and TiAl or TiC powder powder are employed with sublimable substance such as chlorobenzene or naphthalene for making powder compact, see paragraph [0017] of the translation. Thus it would have been obvious to one of ordinary skill in the art that metal powder of JP04116104 is formed of refractory metal powder additional metal powder such as TiAl or TiC taught by JP06-002011 since it is known that these types of metals can be combined with the aromatic binder system of JP04116104 as taught by JP06-002011 for making powder compact.

Claims 27-39 and 41-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP04116104 in view of Herrmann (U.S. Patent No. 3,330,892).

The differences between the claims and JP04116104 are that JP04116104 does not specifically teach the binder is a polymer.

Herrmann teaches a moldable batch mixture for forming article by powder metallurgy forming techniques, wherein the mixture comprises inorganic material such as metal powder mixed with and dispersed in a fluid organic vehicle together with an organic deflocculant and binder (col. 1, l. 10-27). The organic vehicle can be any organic material that is solid at normal room temperature and pressure such as paradichlorobenzene, benzoic acid and naphthalene, col. 3, Table I. The organic binder can be any one of carnauba wax, polymethyl methacrylate resin, polyethylene glycols with average molecular weight ranging from 3000 to 20000, polyvinyl acetate resin, unoxidized and oxidized microcrystalline

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waxes, styrene resins with average molecular weights of 1500 or more, chlorinated naphthalene and polyvinyl alcohol resin (col. 7, l. 3-10).

Since Hermann teaches polymer binder is used with the same sublimable substance as disclosed by JP04116104, therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the binder taught by JP04116104 be made of the material taught by Hermann.

Regarding claims 28 to 37, Hermann teaches that the organic binder can be present in the amount of 2-3 percent by weight (col. 2, l. 16-18) and the organic binder taught includes polymethyl methacrylate, which is a thermoset polymer and polyvinyl acetate resin, which is thermoplastic polymer. Although the amount of the binder is in wt. percent, it is the examiners position that, when used in the composition of JP04116104 and converted to volume percent, this amount inherently encompasses the claimed amount absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

Regarding claims 38-39 and 41-42, Hermann discloses that deflocculant can be surfactants (col. 4, l. 18+) and that the deflocculant functions as a binder, col. 2, lines 19-22. As such it would be added in the amount of about 2-3 percent by weight. Although the amount of the surfactant is in wt. percent, it is the examiners position that, when used in the composition of JP04116104 and converted to volume percent, this amount inherently encompasses the claimed amount absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

Regarding claim 43-46, Hermann discloses the deflocculant can be fatty acid (col. 4, l. 27-33) and Table III and metal salt of fatty acid (col. 4, l. 53-61 and Table V). These deflocculants inherently act as lubricant as claimed. Regarding claim 47, Hermann teaches organic binder can be carnauba wax and microcrystalline waxes, col. 7, l. 5 and 8, which inherently serve as lubricant. As for claims 48-49, Hermann discloses employing oleic acid, i.e., fatty acid in the amount of 6cc., Example 12. While there is no recitation of the volume amount of the lubricant in the feedstock, it is the examiners position that, when

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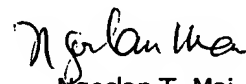
used in the composition of JP04116104 and converted to volume percentage, the amount of lubricant in the composition would inherently encompass the claimed amounts absent evidence to the contrary. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention in the absence of any evidence showing the contrary.

6. Claim 52 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.